

**BEAM STEERING WITH A
PERIODIC RESONANCE STRUCTURE**

ABSTRACT OF THE DISCLOSURE

Method and apparatus for steering an antenna beam using a periodic resonance structure (300). The method can include the step of electrically and magnetically coupling a first fluid dielectric (114) to a plurality of transmission line stubs (104) that are respectively coupled to a plurality of radiating elements (102) of a periodic resonance structure (300). The first fluid dielectric (114) is controlled to selectively vary an electrical length of each of the transmission line stubs (104). This permits directing an angle of a redirected RF beam produced by an incident RF signal (306) impinging on the periodic resonance structure (300).